

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 5-6, 9-10, 13-14, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (US# 5975252) in view of JP 2001-41268.

Suzuki et al disclose a brake including; a support member 2 fixed to a vehicle body and disposed adjacent to a rotor which rotates together with a wheel; a pair of pads 10 and 15 supported by the support member on both sides of the rotor slidably in an axial direction thereof; a caliper 5 supported displaceably in the axial direction of the rotor, the caliper being supported by a plurality of guide holes provided in the support member and a plurality of guide pins 8 respectively fitted in the guide holes; a claw portion 5c provided on one side of a bridge portion 5b of the caliper, the bridge portion straddling the rotor; and a piston 9 provided on another side thereof, wherein the pair of pads are pressed against both side surfaces of the rotor in consequence of the extension of the piston so as to effect braking, pressed-side shim plates 14 and 17 are respectively retained by those surfaces of back plates of the pair of pads which are located away from a rotor side, pressing-side shim plates 13 and 18 are respectively retained by pressing sides of the claw portion and the piston, and each of the pressed-

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side shim plates and each of the pressing-side shim plates are slidably abutted against each other. Suzuki lacks the disclosure of the pressed-side shim plates being fixed to the retaining surfaces. JP 2001-41268 discloses a similar brake arrangement and further teaches the use of claws 28 to retain pressed-side shim plates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to fix the press-side plates of Suzuki et al, as taught by Matsumoto, to ensure proper outer shim retention. Suzuki further lacks the disclosure of a lack of projection across the interface of the shim plates. It further would have been obvious to one of ordinary skill in the art at the time the invention was made to eliminate the projections of Suzuki should clamping of outer the shim plate to the pad not be desired. Note that the attachment is not necessary once the shim is connected to the claw. Also note MPEP 2144.04(II)(A).

Regarding claims 2 and 10, note lower pin in figure 2 has a series of alternating first and second diameters at its end.

Regarding claims 5 and 13, the shapes are trapezoids.

Regarding claims 6 and 14, the shapes are integral.

Regarding claim 20, Suzuki et al disclose a brake having; a support member 2 fixed to a vehicle body and disposed adjacent to a rotor which rotates together with a wheel; a pad 15 supported by the support member; a caliper 5 supported displaceably in an axial direction of the rotor; a claw portion 5c provided on a bridge portion of the caliper, the bridge portion straddling the rotor; a pressed-side shim plate 17 fixed to a back plate of the pad; and a pressing-side shim plate 19 on the claw portion, wherein

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the pressed-side shim plate and the pressing-side shim plate are slidably abutted against each other. Suzuki lacks the disclosure of the pressed-side shim plate being fixed to the caliper. JP 2001-041268 discloses a similar brake arrangement and further teaches the use of claws 28 to retain pressed-side shim plates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to fix the press-side plates of Suzuki et al, as taught by JP 2001-041268, to ensure proper shim placement and retention.

Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (US# 5975252) and JP 2001-41268, as applied to claim 1 above, in further view of Tribuzio et al (US# 5562187).

Suzuki et al and JP 2001-41268 discloses all the limitations of the instant claims with exception to the disclosure of two pins having enlarged diameters at intermediary portions. Tribuzio et al discloses a similar brake caliper and further teaches the use of pins having enlarged diameters to provide elasticity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize pins such as taught by Tribuzio et al in the brake of Suzuki et al to provide elasticity to the pin assembly, thereby reducing stresses to potential damage to the guide pins.

Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (US# 5975252) and JP 2001-41268, as applied to claim 1 above, in further view of in view of JP 1-224530.

Suzuki et al and JP 2001-41268 disclose all the limitations of the instant claims with exception to the disclosure of elastic rings on each side of the guide pin. JP 1-

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224530 discloses a similar brake and further teaches rings to reduce torque fluctuations and vibrations. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize rings at the ends of the guide pins of Suzuki et al as taught by JP 1-224530 to reduce torque fluctuations and vibrations, thereby reducing noise and increasing user comfort.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley T. King whose telephone number is (571) 272-7117. The examiner can normally be reached on 11:00-7:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Bradley T King/
Primary Examiner, Art Unit 3683

BTK